REMARKS

Claims 1-29 are pending in the application. Claims 1-29 stand rejected. Claims 1 and 21 are being amended. No new matter is being introduced by way of these amendments.

Remarks Responsive to the Rejections under 35 U.S.C. §102(b)

In Part 4 of the present Final Office Action, claims 1-2, 4, 6-7, 15-17, and 19-20 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,656,882 A to Lazarus et al. ("Lazarus"). This rejection was presented in the first Office Action, mailed August 5, 2005. Responsive to the first Office Action, Applicants amended claim 1 to recite, "a transducer including an electro-active material . . . and non-electro-active material coupled to the electro-active material." Support for that claim amendment can be found at least in Fig. 1B and the specification as originally filed on page 6, lines 4-9.

The electrical power generation system of claim 1 also recites, "a buffer mechanically coupled to the transducer . . . facilitating the transducer to operate within a predetermined mechanical loading range." In remarks on page 7 of the Amendment filed on December 5, 2005 responsive to the first Office Action, Applicant previously stated that the "buffer is external from the transducer" in reference to the buffer mechanically coupled to the transducer of claim 1.

In the present final Office Action, in part 2, it states, "it is noted that the features upon which applicant relies (i.e., a buffer external to the actuator assembly) are not recited in the rejected claim(s)." Responsively, Claim 1 is being amended in the Claim Listing above to recite, "a buffer external from and mechanically coupled to the transducer." Support for the amendment is found in the specification at least on page 5, lines 26-28 in reference to Fig. 1B (ref. no. 6) and page 7, lines 21-24 in reference to Fig. 2 (ref. no.18).

Thus, when comparing amended claim 1 against the cited references, as described below in detail, it is useful to understand the distinction between the "non-electro-active material" and the "buffer limitations of claim 1; namely, in amended claim 1, the "non-electro-active material" is inside the transducer, and the "buffer" is external from and mechanically coupled to the transducer.

Referring now to the cited reference, Lazarus discloses a typical actuator assembly in which electro-active material is bonded to an electroded sheet by a structural polymer to form a card. See abstract, lines 1-3. The bonding occurs inside the actuator assembly, and the structural polymer (i) provides a bending stiffness such that the thin electro-active material does not deform to its breaking point and (ii) provides a mechanical stiffness such that shear forces are efficiently coupled from the electro-active material to a workpiece. See abstract, lines 9-13.

Based on the foregoing, the structural polymer is inside the Lazarus actuator assembly, and, thus, the Lazarus structural polymer can only be considered as corresponding to Applicants' "non-electro-active material coupled to the electro-active material" of Applicants' claim 1. Lazarus does not disclose a buffer in his abstract that can be considered as corresponding to the "buffer" of Applicants' claim 1 ("a buffer mechanically coupled to the transducer and adapted to be mechanically coupled to a structure").

Similarly, referring to Lazarus' Fig. 2B, the Lazarus device includes a thin film 110 that provides an electrical connection to a bare electro-active (e.g., piezo) material, as well as providing electrical environmental separation between structure/environment and the bare electro-active material. In terms of its relationship to Applicants' now amended claim 1, the thin film 110 of Lazarus is internal to the actuator assembly and, thus, can again only be considered as corresponding to the "non-electro-active material coupled to the electro-active material" of Applicants' claim 1. Lazarus again fails to disclose a buffer corresponding to the "buffer" of Applicants' claim 1, as described above.

Because claims 2, 4, 6-7, 15-17, and 19-20 depend from claim 1, these claims should be allowed for at least the same reasons.

Remarks Responsive to the Rejections under 35 U.S.C. 103(a)

In Part 6, on page 3 of the present Office Action, claims 3, 5, 8-10, 14, and 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lazarus in view of U.S. Patent No. 5,305,507 to Dvorsky et al. ("Dvorsky"). Because these claims depend from claim 1, the remarks presented above apply. Therefore, because the rejection under 35 U.S.C. 103(a) is not being applied to claim 1, Applicants respectfully submit that the rejections of claims 3, 5, 8-10,

14, and 18 should be withdrawn for at least the same reasons as described above in reference to claim 1.

In Part 8, page 5 of the present Office Action, claims 11-13 and 21-29 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lazarus in view of Dvorsky and further in view of U.S. Patent No. 4,467,236 to Kolm et al.

Claim 21 is being amended in the claim listing above to include limitations similar to claim 1 as amended in the Claim Listing above. Accordingly, Applicants respectfully submit that, since the rejection under 35 U.S.C. 103(a) is not being presented in reference to claim 1, the rejections of claims 11-13 and 21-29 should be withdrawn for at least the same reasons as presented above in reference to claim 1.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims (claims 1-29) are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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